Remarks

Applicant has amended three of the independent claims, claims 6, 18, and 22, to clarify the concepts claimed therein. Applicant has also amended three dependent claims, claims 3, 7, and 15, to clarify the concepts claimed therein. Applicant makes no admission, however, that these amendments narrow the scope of the claims. For at least the reasons given below, Applicant submits that all of the currently pending claims, claims 2-10, 12-24, and 26-28, are allowable.

Section 102 Rejections

In the Office Action dated November 3, 2003, the Examiner rejected claims 2-10, 12-24, and 26-28 under 35 U.S.C. § 102(b) as being anticipated by G.B. Patent No. 751,060 ("the '060 patent"). Office Action pg. 2. Applicant, however, disagrees with the rejections.

To anticipate a claim under § 102, a reference much teach each and every limitation of the claim. M.P.E.P. § 2131. Furthermore, the elements in the reference must be arranged as specified in the claim. Id. The '060 patent, however, fails to teach or suggest at least one limitation in each of claims 2-10, 12-24, and 26-28. Thus, the reference does not anticipate these claims.

Claim 6 is an independent claim containing limitations that the '060 patent fails to teach or suggest. Claim 6, as amended, recites:

> A valve comprising:
>
> a valve body defining an interior cavity in communication with a first fluid passage and a second fluid passage, the volume of the cavity substantially equally distributed about a central axis;
>
> a tubular throttling cage in the cavity and in communication with the first fluid passage, the tubular throttling cage positioned such that an annular volume is defined between the throttling cage and a wall of the cavity and having a plurality of flow ports arranged about a perimeter of the throttling cage, wherein fluid flows between the first fluid passage and the second fluid passage through the throttling cage, a longitudinal axis of the throttling cage is positioned offset from the central axis of the cavity, and the flow ports are angled towards the second fluid passage; and

a plug closely received in the throttling cage and moveable about the longitudinal axis to selectively cover the flow ports thereby restricting flow between the first fluid passage and the second fluid passage.

Nowhere, however, does the '060 patent teach or suggest "a tubular throttling cage in the cavity and in communication with the first fluid passage, the tubular throttling cage positioned such that an annular volume is defined between the throttling cage and a wall of the cavity and having a plurality of flow ports arranged about a perimeter of the throttling cage, wherein ... a longitudinal axis of the throttling cage is positioned offset from the central axis of the cavity, and the flow ports are angled towards the second fluid passage." Applicant notes the Examiner's assertion to the contrary, Office Action pgs. 2-3, but: 1) cross members 17 and beveled faces 18 of cage 6 in FIGs. 2-3, which the Examiner cites for teaching angles, actually direct flow away from outlet duct 3 for at least two of the openings between cross members 17; and 2) cage 6 in FIG. 5, which the Examiner also cites for teaching angles, does not have an annular volume therearound. Thus, the '060 patent fails to teach or suggest all of the limitations of claim 6. Hence, Applicant respectfully requests the Examiner to withdraw the § 102 rejection thereof.

Claims 2-5 and 7-10 depend from claim 6 and, hence, contain all of its limitations, which have already been shown to distinguish over the '060 patent. Furthermore, these claims contain additional limitations to those in claim 6. For example, claim 7 specifies that "walls of the flow ports pass substantially straight through the throttling cage." Nowhere, however, does the '060 patent teach or suggest such a limitation. Indeed, the edges of cross members 17 in the '060 patent are hemispherical, FIG. 3, and the edges of cross members 21-22 are pear-drop shaped, pg. 2, ll. 119-122; FIG. 5. Thus, the '060 patent fails to teach or suggest this limitation. As another example, claim 8 specifies that "the throttling cage has a triangular flow splitter." But again, nowhere does the '060 patent teach or suggest such a limitation. Applicant notes the Examiner's assertion regarding cross member 20 of the '060 patent, Office Action pg. 2, but the '060 patent explains that "cross member 20 is widened, so that it completely closes off about 120° of the rearward side of the spacer, and has a crescent-shaped cross section," pg. 2, ll. 115-119. Thus, the '060 patent fails to teach or suggest this limitation. For at least these reasons, and

for the reasons given with respect to claim 6, Applicant submits that the '060 patent fails to teach or suggest all of the limitations of claims 2-5 and 7-10 and, therefore, fails to anticipate these claims. Applicant, therefore, respectfully requests that the Examiner withdraw the § 102 rejection of these claims.

Claim 14 is another independent claim containing limitations that the '060 patent fails to teach or suggest. Claim 14 recites:

> A fluid flow control device, comprising:
> a flow body having an internal chamber;
> a first fluid passage intersecting the chamber;
> a second fluid passage intersecting the chamber;
> a tubular member residing in the internal chamber, the tubular member being in communication with the first fluid passage and having a plurality of lateral ports, wherein the lateral ports are angled towards the second fluid passage; and
> a plug adapted for movement in an interior of the tubular member to selectively cover a portion of the ports;
> wherein an annular volume between the tubular member and the flow body is smallest opposite the second fluid passage.

For reasons similar to those discussed with respect to claim 6, however, nowhere does the '060 patent teach or suggest "a tubular member residing in the internal chamber, the tubular member being in communication with the first fluid passage and having a plurality of lateral ports, wherein the lateral ports are angled towards the second fluid passage ... wherein an annular volume between the tubular member is smallest opposite the second fluid passage." For at least this reason, the '060 patent fails to teach or suggest all of the limitations of claim 14. Thus, Applicant respectfully requests the Examiner to withdraw the § 102 rejection thereof.

Claims 12-13 and 15-17 depend from claim 14 and, hence, contain all of its limitations, which have already been shown to distinguish over the '060 patent. Furthermore, these claims contain additional limitations to those in claim 14. For example, claim 15, as amended, specifies that "walls of the lateral ports pass substantially straight through the tubular member." But for reasons similar to those discussed for claim 7, the '060 patent fails to teach or suggest this

limitation. As another example, claim 16 specifies that "two adjacent lateral ports form a triangular flow splitter in the tubular member." For reasons similar to those discussed with respect to claim 8, however, nowhere does the '060 patent teach or suggest such a limitation. For at least these reasons, and for the reasons given with respect to claim 14, Applicant submits that the '060 patent fails to teach or suggest all of the limitations of claims 12-13 and 15-17 and, therefore, fails to anticipate these claims. And in view of this, Applicant respectfully requests the Examiner to withdraw the § 102 rejection thereof.

Claim 18 is another independent claim containing limitations that the '060 patent fails to teach or suggest. Claim 18, as amended, recites:

> A throttling cage for a globe valve, comprising:
> a tubular body having a plurality of laterally oriented flow ports, walls of the flow ports being substantially straight through the tubular body, wherein one of the ports directs flow in a first direction, and at least one other port is angled to direct flow towards the first direction.

Nowhere, however, does the '060 patent teach or suggest "a tubular body having a plurality of laterally oriented flow ports, walls of the flow ports being substantially straight through the tubular body, wherein one of the ports directs flow in a first direction, and at least one other port is angled to direct flow towards the first direction." For reasons similar to those discussed with respect to claim 7, the '060 patent fails to teach or suggest "walls of the flow ports being substantially straight through the tubular body," and, for reasons similar to those discussed with respect to claim 6, the '060 patent fails to teach or suggest that "one of the ports directs flow in a first direction, and at least one other port is angled to direct flow towards the first direction." For at least these reasons, Applicant submits that the '060 patent fails to teach or suggest all of the limitations of claim 18. Applicant, therefore, respectfully requests the Examiner to withdraw the § 102 rejection thereof.

Claims 19-21 depend from claim 18 and, hence, contain all of its limitations, which have already been shown to distinguish over the '060 patent. Furthermore, these claims contain additional limitations to those in claim 18. For example, claim 21 specifies that "two adjacent flow ports form a triangular flow splitter." But for reasons similar to those discussed for claim 8,

the '060 patent fails to teach or suggest this limitation. For at least this reason, and for the reasons given with respect to claim 18, Applicant submits that the '060 patent fails to teach or suggest all of the limitations of claims 19-21 and, therefore, fails to anticipate these claims. Applicant, accordingly, respectfully requests that the Examiner withdraw the § 102 rejection of these claims.

Claim 22 is another independent claim containing limitations that the '060 patent fails to teach or suggest. Claim 22, as amended, recites:

> A valve comprising:
>
> a valve body defining an interior cavity in communication with a first fluid passage and a second fluid passage;
>
> a tubular throttling cage in the cavity having an open end in communication with the first fluid passage and a plurality of flow ports arranged about a perimeter of the throttling cage, walls of the flow ports being substantially straight through the throttling cage, wherein one of the flow ports directs flow in a first direction and at least one of the ports is angled to direct flow towards the first direction, and wherein fluid flows between the first fluid passage and the second fluid passage through the throttling cage; and
>
> a plug closely received in the throttling cage and moveable in the throttling cage to selectively cover the flow ports thereby restricting flow between the first fluid passage and the second fluid passage.

Nowhere, however, does the '060 patent teach or suggest "a tubular throttling cage in the cavity having an open end in communication with the first fluid passage and a plurality of flow ports arranged about a perimeter of the throttling cage, walls of the flow ports being substantially straight through the throttling cage, wherein one of the flow ports directs flow in a first direction and at least one of the other ports is angled to direct flow towards the first direction, and wherein fluid flows between the first fluid passage and the second fluid passage through the throttling cage." For reasons similar to those discussed with respect to claim 7, the '060 patent fails to teach or suggest "walls of the flow ports being substantially straight through the throttling cage," and, for reasons similar to those discussed with respect to claim 6, the '060 patent fails to teach or suggest that "one of the flow ports directs flow in a first direction and at least one of the other ports is angled to direct flow towards the first direction." For at least these reasons, Applicant

submits that the '060 patent fails to teach or suggest all of the limitations of claim 22. Applicant, therefore, respectfully requests the Examiner to withdraw the § 102 rejection thereof.

Claims 23-24 depend from claim 22 and, hence, contain all of its limitations, which have already been shown to distinguish over the '060 patent. Furthermore, these claims contain additional limitations to those in claim 22. For at least these reasons, Applicant submits that claims 23-24 contain limitations not taught or suggested by the '060 patent and, accordingly, respectfully requests the Examiner to withdraw the § 102 of these claims.

Claim 27 is an independent claim containing limitations that the '060 patent fails to teach or suggest. Claim 27 recites:

> A valve, comprising:
> a flow body having an internal chamber;
> an inlet intersecting the chamber;
> an outlet intersecting the chamber;
> a tubular member residing in the internal chamber, the tubular member in communication with the inlet and having a plurality of lateral ports in communication with the chamber, wherein at least two of the lateral ports are angled towards the outlet; and
> a plug movable in an interior of the tubular member to selectively cover a portion of the ports;
> wherein an annular volume between the tubular member and the flow body is smallest opposite the outlet.

For reasons similar to those discussed with respect to claim 6, nowhere does the '060 patent teach or suggest "a tubular member residing in the internal chamber, the tubular member in communication with the inlet and having a plurality of lateral ports in communication with the chamber, wherein at least two of the lateral ports are angled towards the outlet ... wherein an annular volume between the tubular member and the flow body is smallest opposite the outlet." For at least these reasons, Applicant submits that the '060 patent fails to teach or suggest all of the limitations of claim 27. Applicant, therefore, respectfully requests that the Examiner withdraw the § 102 rejection thereof.

Claims 26 and 28 depend from claim 27 and, hence, contain all of its limitations, which have already been shown to distinguish over the '060 patent. Furthermore, these claims contain

additional limitations to those in claim 27. For example, claim 28 specifies "a triangular flow splitter in the tubular member opposite the outlet." But for reasons similar to those discussed for claim 7, the '060 patent fails to teach or suggest this limitation. For at least these reasons, and for the reasons given with respect to claim 27, Applicant submits that the '060 patent fails to teach or suggest all of the limitations of claims 26 and 28 and, therefore, fails to anticipate these claims. And in view of this, Applicant respectfully requests that the Examiner withdraw the § 102 rejection of these claims.

Conclusion

For the reasons given above, Applicant submits that a good-faith effort has been made to advance the prosecution of the Application. Furthermore, Applicant submits that the Application is in condition for allowance and respectfully requests same. If the Examiner feels that prosecution may be advanced by a conference, however, Applicant respectfully requests the Examiner to contact the below-listed attorney.

Applicant believes that no fees are required by this paper. But if Applicant is incorrect, Applicant respectfully requests that any required fees be charged to Deposit Account No. 06-1050, with reference to the instant case.

Respectfully submitted,

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